Visual Aid for Blind

Niyas P

TVE17ECSP10
M. Tech (Signal Procesing)
Third Semester

https://github.com/niyaspcet/MTechMainProject

Guide
Dr. Sreelatha G.
Assistant Professor
Department of ECE
College of Engineering, Trivandrum

September 12, 2018

Overview

1. Introduction
2. Motivation
3. Objectives
4. Block Diagram
5. Reference
6. Questions

Introduction

- Vision plays a vital role in gaining knowledge of the surrounding world.
- According to the WHO
  - There are 285 million people in the world with visual impairment.
  - 39 million of whom are blind
- Several systems were designed to improve the quality of life of VI (Visually Impaired) people.
- White cane and guide dogs were used traditionally
- Electronic aids are used nowadays
- ETA (Electronic Travel Aids) is an example of such sytem

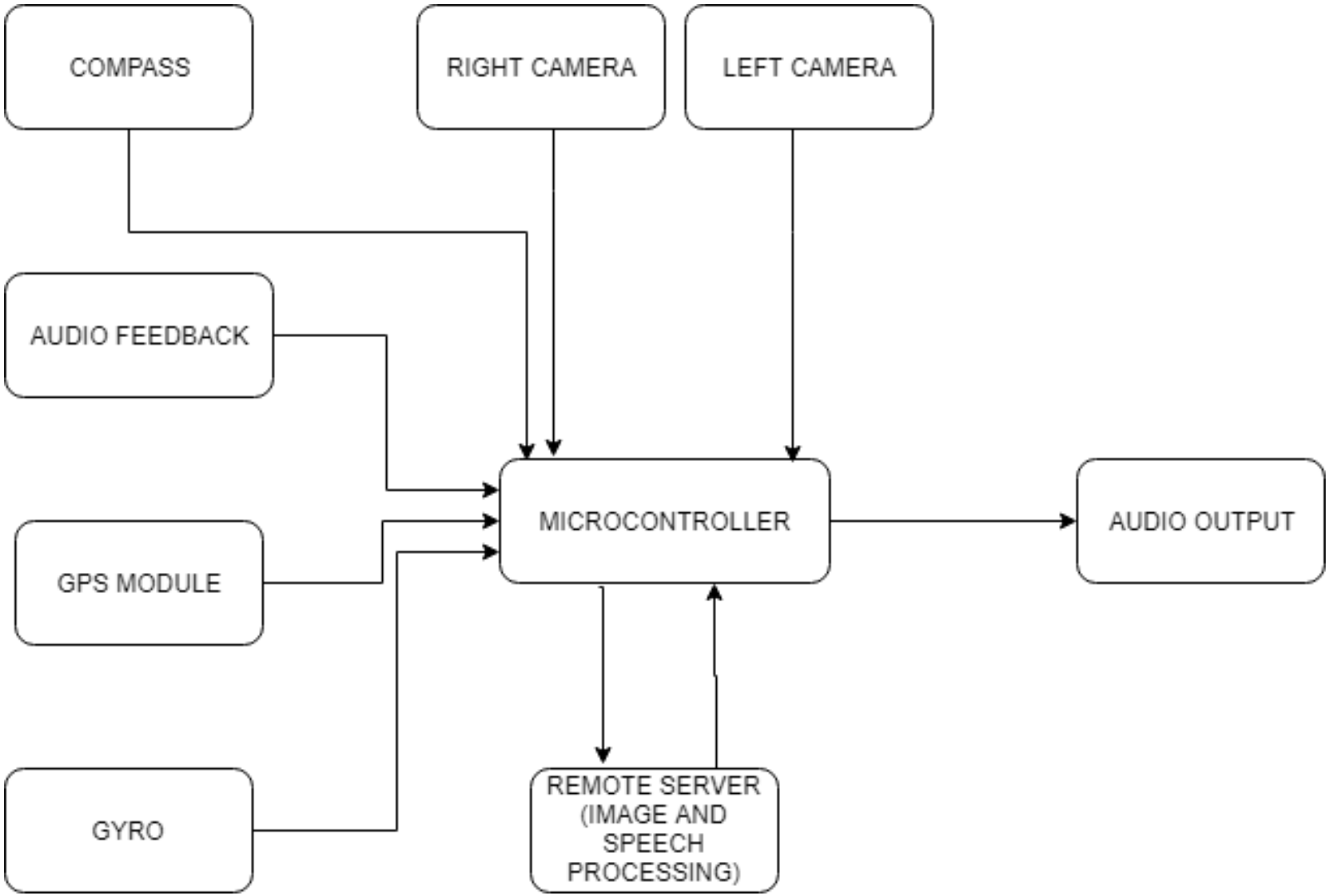
Motivation

- 90% of VI people lives in developing countries like india
- Improving the quality of life of such people is one of the challenging task
- Even though there were different travel aids, the acceptance of visual aids are quite low among VI impaired people, which implies further researches.

Objectives

- Develop a visual aid which helps visual impaired or low vision people0 with following features.
  - Navigation
  - People and object identification
  - Reading

Block Diagram



References I

[1] K. Patil, Q. Jawadwala, and F. C. Shu, "Design and construction of electronic aid for visually impaired people," *IEEE Transactions on Human-Machine Systems*, vol. 48, no. 2, pp. 172–182, apr 2018.

[2] D. J. Brown and M. J. Proulx, "Audio–vision substitution for blind individuals: Addressing human information processing capacity limitations," *IEEE Journal of Selected Topics in Signal Processing*, vol. 10, no. 5, pp. 924–931, aug 2016.

[3] W. M. Elmannai and K. M. Elleithy, "A highly accurate and reliable data fusion framework for guiding the visually impaired," *IEEE Access*, vol. 6, pp. 33 029–33 054, 2018.

[4] S. A. Sabab and M. H. Ashmafee, "Blind reader: An intelligent assistant for blind," in *2016 19th International Conference on Computer and Information Technology (ICCIT)*. IEEE, dec 2016.

References II

[5] P. G. Bhat, D. K. Rout, B. N. Subudhi, and T. Veerakumar, "Vision sensory substitution to aid the blind in reading and object recognition," in *2017 Fourth International Conference on Image Information Processing (ICIIP)*. IEEE, dec 2017.

Questions ?

Thank You